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10/563,098

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EXAMINER

LIU, MICHAEL

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/563,098 | Applicant(s) TOPLISS ET AL. | |
| | Examiner Michael Liu | Art Unit 2851 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>20051230</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Receipt is acknowledged of the Preliminary Amendment filed 30 December 2005.
2. Receipt is acknowledged of the relevant reference in Koeber (US 3,514,179; listed in the IDS filed 20051230), which was cited in the PCT international search report as an "X" reference.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Camera lens suspension with pivotal connections.

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of legal language present. Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities: The Specification needs different headings to point out the different aspects of the

disclosure. For example, the headings "Background of the Invention" and "Detailed Description of the Drawings" are a few of the headings necessary.

Appropriate correction is required.

Claim Objections

1. Claims 1, 3, and 21 are objected to because of the following informalities: There are multiple pivotal connections claimed. Therefore, each instance should be labeled as "first" or "second" to help distinguish them. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-17 & 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomson-Brandt (EP 0563034; references drawn from English translation filed in IDS).

Re claim 1: Thomson-Brandt discloses a camera comprising

- a support structure H;
- a lens holder L holding at least one lens O;
- a suspension [holding device; see Fig 3] for mounting said lens holder on the support structure to allow relative movement of the lens holder and the support structure [see arrows]; and
- an actuator [page 8, par 4: magnets and coils] for moving said lens holder,

wherein the suspension includes two link elements M each connected at a first end to the support structure by a first pivotal connection [left side K1] and at the other, second end to the lens holder by a second pivotal connection [right side K1], the pivotal connections allowing pivoting of the respective link element around a respective pivot axis, all the pivot axes being parallel, and the extent of the two link elements perpendicular to their respective pivot axes being parallel & of equal length [see Fig 3].

Re claim 2: wherein the suspension [see Fig 3] further includes

a first attachment element [left side E] attached to the support structure, the pivotal connections at the first end of each link element being between the first attachment element and the link elements, and

a second attachment element [right side E] attached to the lens holder, the pivotal connections at the second end of each link element being between the second attachment element and the link elements.

Re claim 3: Thomson-Brandt discloses a camera comprising

a support structure H;

a lens holder L holding at least one lens O;

a suspension [see Fig 3] for mounting said lens holder on the support structure to allow relative movement of the lens holder and the support structure in a movement direction [see arrows]; and

an actuator [page 8, par 4: magnets and coils] for moving said lens holder,

wherein the suspension comprises at least two pivotal linkages K1 connected in series between the support structure and the lens holder and interconnected within the

Art Unit: 2851

series by at least one respective intermediate element Z, the pivotal linkages being oriented with respect to each other so that the relative movements between the ends of each pivotal linkage in a direction perpendicular to the movement direction compensate for one another,

each pivotal linkage comprising two link elements M each having a first pivotal connection at a first end of the linkage [left side K1] and a second pivotal connection at the other, second end of the linkage [right side K1], all the pivotal connections allowing pivoting of the respective link element around a respective pivot axis [about K1], all the pivot axes being parallel, and the extent of the two link elements perpendicular to their respective pivot axes being parallel and of equal length [see Fig 3].

Re claim 4: wherein the suspension consists of two pivotal linkages K1 of the same length arranged antiparallel to one another [see Fig 3].

Re claim 5: wherein the suspension further includes

a first attachment element [left side E] attached to the support structure H, the pivotal connections at the first end of each link element M in the linkage [left side K1] at one end of the series being between the first attachment element & the link elements, &

a second attachment element [right side E] attached to the lens holder L, the pivotal connections at the second end of each link element M in the linkage [right side K1] at the other end of the series being between the second attachment element and the link elements [see Fig 3].

Re claim 6: wherein all said elements of said suspension are formed integrally from one piece of material [page 7, par 4].

Re claim 7: wherein said pivotal connections K1 are formed by portions of said piece of material having a smaller thickness than the remainder of said piece of material [see Fig 2: thickness of K1 much smaller than M].

Re claim 8: wherein the thickness of the link elements M tapers towards said pivotal connections K1 [see Fig 2].

Re claim 9: wherein the link elements M are made of plastics material [page 7, par 4: synthetics].

Re claims 10 and 11: wherein the pivot axes of the pivotal connections K1 extend around, and outwardly of, the lens holder L [see Fig 3].

Re claim 12: wherein the pivotal connections K1 extend along a length which exceeds a tenth of the diameter of the lens holder L. [See Fig 3: Thickness into page of K1 must be as large as length of borings B in order to fit screws or pins into the material (page 8, par 2). Therefore, this thickness of K1 exceeds a tenth of the diameter of L.]

Re claim 13: wherein actuator extends around the lens holder leaving a single gap and the suspension is located in said gap [page 8, par 4].

Re claim 14: wherein the suspension connects the support structure and the lens holder within a sector of less than 90 degrees around a central axis of said lens holder [see Fig 3].

Re claim 15: wherein the lens holder is force-coupled to the housing exclusively through the suspension and the actuator [see Fig 3].

Re claim 16: wherein the pivotal connections allow an amount of rotational motion limited to less than 20 degrees. [See Fig 3: Pivotal connections K1 allow about 20 degrees of rotational motion.]

Re claim 17: wherein the link elements M extend across the entire width of the lens holder L. [See Fig 3: M extends past the entire width (vertical direction on the page) of L.]

Re claim 21: Thomson-Brandt discloses a camera comprising
a support structure H;
a lens holder L holding at least one lens O;
a suspension [see Fig 3] for mounting said lens holder on the support structure to allow relative movement of the lens holder and the support structure [see arrows]; and
an actuator [page 8, par 4: magnets and coils] for moving said lens holder,
wherein the suspension includes at least one pivotal linkage M comprising two link elements K1 each having a first pivotal connection at a first end of the linkage [left side K1] and a second pivotal connection at the other, second end of the linkage [right side K1], all the pivotal connections allowing pivoting of the respective link element around a respective pivot axis [at K1], all the pivot axes being parallel, and the extent of the two link elements perpendicular to their respective pivot axes being parallel and of equal length [see Fig 3].

Re claim 22: wherein the suspension comprises a single pivotal linkage connected at a first end to the support structure H and at the other, second end to the lens holder L [see Fig 3].

Re claim 23: wherein the suspension comprises at least two pivotal linkages [top and bottom M] connected in series between the support structure H and the lens holder L and interconnected within the series by at least one respective intermediate element Z, the pivotal linkages being oriented with respect to each other so that the relative movements between the ends of each pivotal linkage in a direction perpendicular to the movement direction compensate for one another [see Fig 3].

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomson-Brandt in view of McKevitt et al (WO 02/103451).

Thomson-Brandt discloses all limitations of the claimed invention but is silent regarding an electro-active actuator.

Re claim 18: McKevitt et al teaches wherein the actuator is an electro-active actuator [page 2, lines 19-24].

Re claim 19: McKevitt et al teaches wherein the actuator is a ceramic actuator [page 8, lines 18-21].

Re claim 20: McKevitt et al teaches wherein the actuator 11 is a bender 12 extending in a helix around an axis 13 which is curved [see Fig 2; page 7, lines 16-22].

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to use the electro-active actuator of McKevitt et al as the actuator of Thomson-Brandt, for the purpose of the actuator being inexpensive and smaller [page 1, lines 9-12].

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Liu whose telephone number is 571-272-9019. The examiner can normally be reached on Monday through Friday 9 am - 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ML 20071015

Michael Liu
Examiner
Art Unit 2851



DIANE I. LEE
SUPERVISORY PATENT EXAMINER